



HEIDENHAIN



Product Information

LS 683 C

LS 673 C

Incremental Linear Encoders

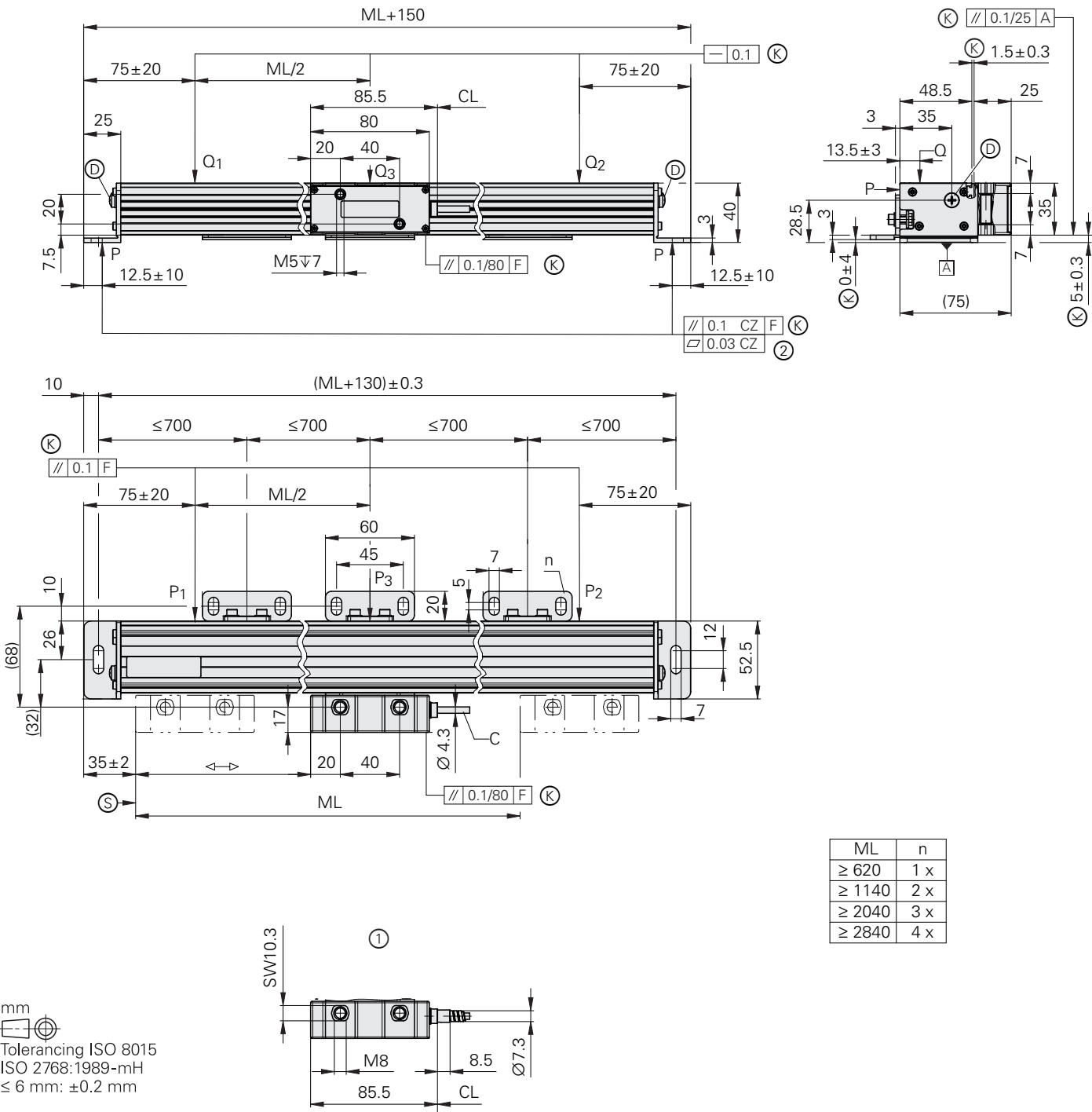
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LS 600 series



F = Machine guideway
ML = Measuring length
P, Q = Measuring points
C = PUR connecting cable
CL = Cable length
↔ = 0 ... ML
K = Required mating dimensions
S = Beginning of measuring length ML
D = Compressed-air inlet
1 = PUR cable in metal armor
2 = Mounting surface

LS 6x3(C)
Starting value for version with distance-coded reference marks between 0 mm and 3200 mm

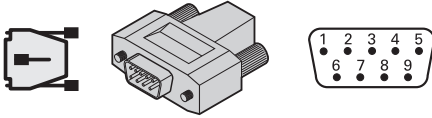
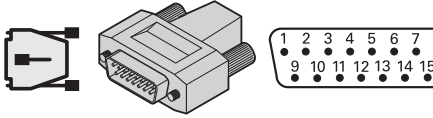
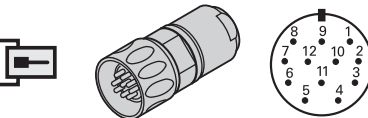


Specifications	LS 683 C	LS 673 C												
Measuring standard Coefficient of linear expansion	Glass scale $\alpha_{\text{therm}} \approx 8 \cdot 10^{-6} \text{ K}^{-1}$													
Accuracy grade	$\pm 5 \text{ }\mu\text{m}$													
Measuring length (ML)* in mm	170 870 2440	220 920 2640	270 970 2840	320 1020 3040	370 1140	420 1240	470 1340	520 1440	570 1540	620 1640	670 1740	720 1840	770 2040	820 2240
Reference mark	Distance-coded ¹⁾													
Interface	 1 V _{PP}													
Signal period	20 μm													
Integrated interpolation	–							1-fold						
Measuring step	–							5 μm						
Supply voltage Without load	5 V $\pm 0.25 \text{ V}$ / $< 150 \text{ mA}$													
Electrical connection	PUR cable and PUR cable with metal armor; cable outlet to the right on the mounting block													
Cable length	3 m, 6 m													
Connecting element	15-pin D-sub connector (male) 15-pin D-sub connector (female) 12-pin M23 connector (male)							15-pin D-sub connector (male) 9-pin D-sub connector (male) 12-pin M23 connector (male)						
Traversing speed	$\leq 60 \text{ m/min}$													
Required moving force	$\leq 5 \text{ N}$													
Vibration 55 Hz to 2000 Hz Shock 6 ms	$\leq 100 \text{ m/s}^2$ $\leq 200 \text{ m/s}^2$													
Operating temperature	0 °C to 50 °C													
Protection IEC 60529	IP53 (IP64 with sealing air via DA 400)													
Mass without cable	0.45 kg + 2.24 kg/m of measuring length													

* Please select when ordering
1) Starting value for version with distance-coded reference marks between 0 mm and 3200 mm

Pin layout

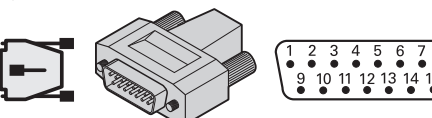
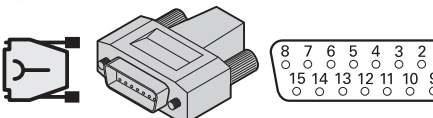
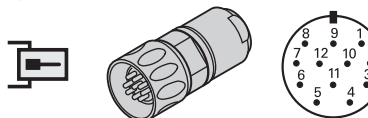
TTL

① 9-pin D-sub connector (male)					② 15-pin D-sub connector (male)					③ 12-pin M23 connector (male)			
													
	Power supply				Incremental signals					Other signals			
①	7	7 ¹⁾	6	6 ¹⁾	2	3	4	5	9	8	/	/	/
②	4	12	2	10	1	9	3	11	14	7	13	5/6/8	15 ²⁾
③	12	2	10	11	5	6	8	1	3	4	7	/	9
	U _P	Sensor U _P	0 V	Sensor 0 V	U _{a1}	U _{a1} [–]	U _{a2}	U _{a2} [–]	U _{a0}	U _{a0} [–]	U _{aS} [–]	Vacant	Reserved, do not assign ³⁾
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	Blue	/	Ecru

Cable shield connected to housing; **U_P** = Power supply voltage
Sensor: The sense line is connected in the encoder with the corresponding power supply line.
Vacant pins or wires must not be used!

- ¹⁾ Only ID 617513-xx, ID 626015-xx
²⁾ No connection: ID 309783-xx, ID 309784-xx, ID 310196-xx, ID 310199-xx
³⁾ Conversion from TTL to 11 μA_{PP} for PWT; otherwise not assigned

1 V_{PP}

① 15-pin D-sub connector (male)					② 15-pin D-sub connector (female)					③ 12-pin M23 connector (male)			
													
	Power supply				Incremental signals					Other signals			
①	4	12	2	10	1	9	3	11	14	7	5/6/8	13	15 ¹⁾
②	1	9	2	11	3	4	6	7	10	12	13/14/15	8	5
③	12	2	10	11	5	6	8	1	3	4	/	7	9
	U _P	Sensor U _P	0 V	Sensor 0 V	A+	A [–]	B+	B [–]	R+	R [–]	Vacant	Reserved, do not assign ²⁾	Reserved, do not assign ³⁾
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	/	Blue	Ecru

- ¹⁾ No connection: ID 310196-xx
²⁾ Serial interface (clock)
³⁾ Serial interface (data)

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More information:

To ensure proper and intended use, comply with the specifications in the following document:
• Brochure *Digital Readouts / Linear Encoders*

208864-xx